

Declaration and Power of Attorney

We, ¹⁻⁰²Dean Engelhardt, ²⁻⁰²Elazar Rabbani, ³⁻⁰²Stanley Kline, ³⁻⁰²~~James G.~~ ^{JANNIS} Stavrianopoulos and ⁴⁻⁰²Dollie Kirtikar, ^{NY} declare that we are respectively citizens of the United States of America, residing at 173 Riverside Drive, New York, New York 10024; 69 Fifth Avenue, New York, New York 10003; 235 Lincoln Place, Brooklyn, New York 11217; 515 West 59 Street, New York, New York 10019; and 42-72 80 Street, Elmhurst, New York 11373, respectively,

that we have read the specification entitled:

MODIFIED NUCLEOTIDES, METHODS OF PREPARING AND UTILIZING
AND COMPOSITIONS CONTAINING THE SAME

and the claims thereof; that we understand the content of the foregoing specification, and we verily believe we are the original, first and joint inventors of the invention described and claimed therein; that we do not know and do not believe that this invention was ever known or used in the United States before our invention thereof, or patented or described in any printed publication in any country before our invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that this invention has not been patented or made the subject of an inventor's certificate in any country foreign to the United States on an application filed by us or our legal representatives or assigns more than twelve months before this application; and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States by us or our representatives or assigns, except as follows:

N O N E

We further declare that we acknowledge our duty to disclose information of which we are aware which is material to the examination of this application.

And we hereby appoint: individually and collectively,

Thomas F. Moran, Reg. No. 16,579; Lester W. Clark, Reg. No. 14,954; Christopher C. Dunham, Reg. No. 22,031; Ivan S. Kavrukov, Reg. No. 25,161; John P. White, Reg. No. 28,678; and Mary-Ellen M. Timbers, Reg. No. 27,928, each of them of 30 Rockefeller Plaza, New York, New York 10112, (Tel. 212-977-9550), our attorneys, each with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith and to file any International Applications which are based thereon under the provisions of the Patent Cooperation Treaty.

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Lastly, we declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Inventor's full name Dean Engelhardt
(Signature)

Dean Engelhardt

Date June 22, 1982

Post Office Address 173 Riverside Drive
New York, New York 10024

Inventor's full name Elazar Rabbani
(Signature)

Elazar Rabbani

Date June 22, 1982

Post Office Address 69 Fifth Avenue
New York, New York 10003

Inventor's full name Stanley Kline
(Signature)

Stanley Kline

Date June 22, 1982

Post Office Address 235 Lincoln Place
Brooklyn, New York 11217

Inventor's full name

James G. Stavrianopoulos
(Signature)

James G. Stavrianopoulos

Date June 22, 1982

Post Office Address

515 West 59 Street

New York, New York 10019

Inventor's full name

Dollie Kirtikar

(Signature)

Dollie Kirtikar

Date June 22nd 1982

Post Office Address

42-72 80 Street

Elmhurst, New York 11373



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Dean L. Engelhardt, et al. Parent Application
Attorney Docket No: Enz-5 (Div. 5) Art Unit: 123
Filed : Herewith Examiner:
For : Modified Nucleotides, Methods Of Preparing
And Utilizing And Compositions Containing
The Same

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

POWER OF ATTORNEY

Dear Sir:

Enzo Biochem, Inc., a corporation of the State of New York, having its principal place of business at 345 Hudson Street, New York, New York 10014, the owner of the entire right, title and interest in and to the above-identified application and the invention disclosed and/or claimed therein, hereby revokes any and all powers of attorney previously granted herein and appoints as principal attorney, Serle I. Mosoff (Reg. No. 25,900) with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, to transact all business in the Patent and Trademark Office connected therewith and to file any International Applications which are based thereon under the provisions of the Patent Cooperation Treaty.

Enzo Biochem, Inc. hereby appoints as associate attorneys in the above identified application Elaine P. Brenner (Reg. No. 29,517) and Ronald C. Fedus (Reg. No. 32,567).

Please address all communications to:

Serle I. Mosoff, Corporate Counsel
Enzo Biochem, Inc.
345 Hudson Street
New York, New York 10014

and direct all telephone calls regarding this application to Serle I. Mosoff at telephone no. (212) 337-3355.

Enzo Biochem, Inc.

EXPRESS MAIL CERTIFICATE	
"Express Mail" Label No.	NB 260 244 81X
Deposit Date	May 31, 1990
I hereby certify that this paper and the attachments herein are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington DC 20231.	
Serle I. Mosoff Reg. No. 25,900	31 May 1990 Date

Norman Kelker May 31, 1990
Norman Kelker, Ph.D. Date
Senior Vice President

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Ronald C. Fedus Reg. No. 32,567	10-13-92 Date



AFTER FINAL REJECTION
EXAMINING GROUP ART UNIT 1812

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Dean Engelhardt et al.
Serial No.: 07/531,953 Group Art Unit: 1812
Filing Date: June 1, 1990 Examiner: Gian Wang, Ph.D.

For: **SUGAR MOIETY LABELED DETECTABLE NUCLEOTIDES**

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

SUBSTITUTE POWER OF ATTORNEY

Dear Sir:

Enzo Diagnostics, Inc., a corporation of the State of New York, having its principal place of business at 40 Oak Drive, Syosset, New York, 11791, the owner of the entire right, title and interest in and to the above-identified application and the invention disclosed and/or claimed therein, hereby revokes any and all powers of attorney previously granted herein and appoints as principal attorney, Ronald C. Fedus (Reg. No. 32,567) with full power of substitution and revocation, to prosecute this application, to make alterations and amendments herein, to receive the patent, to transact all business in the Patent and Trademark Office connected therewith and to file any International Applications which are based thereon under the provisions of the Patent Cooperation Treaty.

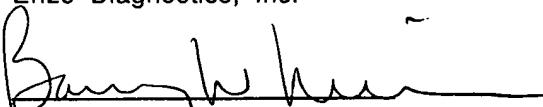
Please address all communications to:

Ronald C. Fedus, Patent Counsel
Enzo Biochem, Inc.
575 Fifth Avenue (18th Floor)
New York, New York 10017

and direct all telephone calls regarding this application to Ronald C. Fedus at telephone no. (212) 856-0876.

Enzo Diagnostics, Inc.

October 13, 1992
Date


Barry W. Weiner
Executive Vice President

Enz-5 (D5)

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11/11/92 10.13.92	

ASSIGNMENT

In consideration for One Dollar (\$1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, Elazar Rabbani, the undersigned, on behalf of Enzo Blochem, Inc., the assignor hereunder, a corporation of the State of New York, having a place of business at 345 Hudson Street, New York, New York 10014;

Hereby sells, assigns and transfers to: Enzo Diagnostics, Inc., a corporation of the State of New York, having a place of business at 40 Oak Drive, Syosset, NY 11791, its successors, assigns and legal representatives, the entire right, title and interest for the United States and all foreign countries, in and to any and all improvements which are disclosed in the following applications for Letters Patent:

Serial No.: 140,980
Title: "Modified Nucleotides, Methods of Preparing and Utilizing and Compositions Containing The Same"
Inventors: Dean Engelhardt, et al.
Filing Date: January 5, 1988
(Doc. No.: Enz-5(C)2)

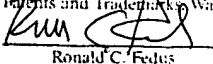
Serial No.: 539,279
Title: "Modified Nucleotides, Methods of Preparing and Utilizing and Compositions Containing The Same"
Inventors: Dean Engelhardt, et al.
Filing Date: June 15, 1990
Doc. No.: Enz-5(Div. 2)(C))

Serial No.: 520,682
Title: "Modified Nucleotides, Methods of Preparing and Utilizing and Compositions Containing The Same"
Inventors: Dean Engelhardt, et al.
Filing Date: May 8, 1990
(Doc. No.: Enz-5(Div. 3))

Serial No.: 532,704
Title: "Modified Nucleotides, Methods of Preparing and Utilizing and Compositions Containing The Same"
Inventors: Dean Engelhardt, et al.
Filing Date: June 4, 1990
(Doc. No.: Enz-5(Div. 4))

Enzo Diagnostics, Inc.

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Deposit Date	October 13, 1992
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 Ronald C. Fedus Reg. No. 32,567	10-13-92 Date

Serial No.: 531,953
Title: "Modified Nucleotides, Methods of Preparing and Utilizing and Compositions Containing The Same"
Inventors: Dean Engelhardt, et al.
Filing Date: June 1, 1990
(Doc. No.: Enz-5(Div. 5))

Serial No.: 532,461
Title: "Modified Nucleotides, Methods of Preparing and Utilizing and Compositions Containing The Same"
Inventors: Dean Engelhardt, et al.
Filing Date: May 31, 1990
(Doc. No.: Enz-5(Div. 6))

Serial No.: 567,039
Title: "Modified Nucleotides, Methods of Preparing and Utilizing and Compositions Containing The Same"
Inventors: Dean Engelhardt, et al.
Filing Date: August 13, 1990
(Doc. No.: Enz-5(Div. 7))

Serial No.: 548,348
Title: "Modified Nucleotides, Methods of Preparing and Utilizing and Compositions Containing The Same"
Inventors: Dean Engelhardt, et al.
Filing Date: July 2, 1990
(Doc. No.: Enz-5(Div. 8))

Serial No.: 607,347
Title: "Methods and Structures Employing Chemically Labeled Polynucleotide Probes"
Inventors: Jannis Stavrianopoulos, et al.
Filing Date: October 30, 1990
(Doc. No.: Enz-7(CIP)C2)

Serial No.: 120,205
Title: "Kit for Terminally Labeling DNA"
Inventors: Christine Brakel, et al.
Filing Date: November 5, 1987
(Doc. No.: Enz-8(C)2)

Serial No.: 607,787
Title: "Assay Method Utilizing Polynucleotide Sequences"
Inventors: Robert Pergolizzi, et al.
Filing Date: October 26, 1990
(Doc. No.: Enz-11 (C)2)

Enzo Diagnostics, Inc.

Serial No.:	521,762
Title:	"Detectable Molecules, Method of Preparation and Use"
Inventors:	Dean Engelhardt, et al.
Filing Date:	May 8, 1990
(Doc. No.:	Enz-13 (Div. 4)C2)
Serial No.:	428,087
Title:	"Hybridization Method For The Detection Of Genetic Material"
Inventors:	Dean Engelhardt, et al.
Filing Date:	October 27, 1989
(Doc. No.:	Enz-15(Div. 1))
Serial No.:	590,548
Title:	"In Vivo Labelling of Polynucleotide Sequences"
Inventors:	Jannis Stavrianopoulos, et al.
Filing Date:	September 27, 1990
(Doc. No.:	Enz-16(C) (Div. 1))
Serial No.:	502,199
Title:	"Method For Detecting An Analyte Moiety By Means of Signal Localization"
Inventor:	Elazar Rabbani
Filing Date:	March 28, 1990
(Doc. No.:	Enz-24(CIP)/25 C1)
Serial No.:	501,643
Title:	"Method For Detecting An Analyte Moiety By Means of Signal Localization"
Inventor:	Elazar Rabbani
Filing Date:	March 29, 1990
(Doc. No.:	Enz-24(CIP)/25 Div.1)
Serial No.:	394,284
Title:	"Novel One Step Method and Polynucleotide Compounds For Hybridizing to Target Polynucleotides"
Inventors:	Jannis Stavrianopoulos, et al.
Filing Date:	August 15, 1989
(Doc. No.:	Enz-26(C))

Serial No.: 479,327
Title: "Nucleotide Sequence Composition And Method For Detection of Neisseria Gonorrhoea And Method For Screening For A Nucleotide Sequence That Is Specific For A Genetically Distinct Group"
Inventors: Andrew Lo, et al.
Filing Date: February 13, 1990
(Doc. No.: Enz-27(C))

Serial No.: 582,830
Title: "Polynucleotide Probes And A Method For Their Preparation"
Inventors: David Mao, et al.
Filing Date: September 13, 1990
(Doc. No.: Enz-29(C))

Serial No.: 509,110
Title: "Polynucleotide Composition and Method"
Inventors: Huey-Lang Yang, et al.
Filing Date: April 13, 1990
(Doc. No.: Enz-31(C))

Serial No.: 443,812
Title: "Inhibition of Self-Quenching In Specific Binding Assay"
Inventor: Stanley Kline
Filing Date: November 29, 1989
(Doc. No.: Enz-32(C))

Serial No.: 160,607
Title: "End-Labeled Nucleotide Probe"
Inventors: Christine L. Brakel, et al.
Filing Date: February 26, 1988
(Doc. No.: Enz-34)

Serial No.: 194,702
Title: "Device With Gradient-Regulated Localized Signal"
Inventors: Elazar Rabbani, et al.
Filing Date: May 17, 1988
(Doc. No.: Enz-35)

Serial No.:	192,256
Title:	"Method For Sample Adherence To Test Substrate"
Inventors:	Huey-Lang Yang, et al.
Filing Date:	May 10, 1988
(Doc. No.:	Enz-36)
Serial No.:	625,584
Title:	"Detection System For Visualizing Proteolysis Of Cellular Proteins"
Inventor:	Maurice Rosenstrauss
Filing Date:	December 10, 1990
(Doc. No.:	Enz-37(C))
Serial No.:	304,748
Title:	"Time-Resolved Fluorometer"
Inventor:	Ian Hurley
Filing Date:	January 31, 1989
(Doc. No.:	Enz-38)
Serial No.:	314,995
Title:	"Energy Transfer Hybridization Assay Using Intercalators and Lanthanide Metals"
Inventors:	Elazar Rabbani, et al.
Filing Date:	February 24, 1989
(Doc. No.:	Enz-39)
Serial No.:	342,196
Title:	"Non-Radioactive In Situ Hybridization Assay"
Inventors:	Joanne Spadaro, et al.
Filing Date:	April 21, 1989
(Doc. No.:	Enz-40)
Serial No.:	316,385
Title:	"Dual-Probe Energy Transfer Hybridization Assay"
Inventors:	Ian Hurley, et al.
Filing Date:	February 27, 1989
(Doc. No.:	Enz-41)
Serial No.:	459,030
Title:	"Amplification Capture Assay"
Inventors:	Christine Brakel, et al.
Filing Date:	December 29, 1989
(Doc. No.:	Enz-43)

Enzo Diagnostics, Inc.

Serial No.: 633,730
Title: "Method for Detecting A Target
Polynucleotide In A Sample Using
A Background Reducing Reagent, And
Composition And Kit Comprising Such
A Reagent"
Inventor: Jannis G. Stavrianopoulos
Filing Date: December 24, 1990
(Doc. No.: Enz-44)

and in and to said applications for Letters Patent and all divisional, continuing, substitute, renewal, reissue, and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on any of said improvements; and in and to all original and reissued patents which have been or shall be issued in the United States and all foreign countries on said improvements:

Hereby also sells, assigns and transfers to: Enzo Diagnostics, Inc., a corporation of the State of New York, having a place of business at 40 Oak Drive, Syosset, NY 11791, its successors, assigns and legal representatives, the entire right, title and interest for the United States and all foreign countries, in and to any and all improvements which are disclosed in the following United States Letters Patent:

Patent No.: 4,994,373
Title: "Method And Structures Employing
Chemically-Labelled Polynucleotide Probes"
Inventors: Jannis G. Stavrianopoulos, et al.
Issue Date: February 19, 1991
(Doc. No.: Enz-7 (CIP)C)

Patent No.: 4,772,548
Title: "Radioisotopic assay Using Isotope Transfer
To Chelator-Target Recognition Molecule
Conjugate"
Inventor: Jannis G. Stavrianopoulos
Issue Date: September 20, 1988
(Doc. No.: Enz-12 (Div. 2))

Patent No.: 4,707,440
Title: "Nucleic Acid Hybridization Assay
And Detectable Molecules Useful In
Such Assay"
Inventor: Jannis G. Stavrianopoulos
Issue Date: November 17, 1987
(Doc. No.: Enz-13)

Enzo Diagnostics, Inc.

Patent No.: 4,843,122
Title: "Detectable Molecules, Method
Of Preparation And Use"
Inventor: Jannis G. Stravrianopoulos
Issue Date: June 27, 1989
(Doc. No.: Enz-13 (Div. 1))

Patent No.: 4,943,523
Title: "Detectable Molecules, Method
Of Preparation And Use"
Inventor: Jannis G. Stravrianopoulos
Issue Date: July 24, 1990
(Doc. No.: Enz-13 (Div. 2))

Patent No.: 4,952,685
Title: "Detectable Molecules, Method
Of Preparation And Use"
Inventor: Jannis G. Stravrianopoulos
Issue Date: August 28, 1990
(Doc. No.: Enz-13 (Div. 4))

Patent No.: 5,002,885
Title: "Detectable Molecules, Method
Of Preparation And Use"
Inventor: Jannis G. Stravrianopoulos
Issue Date: March 26, 1991
(Doc. No.: Enz-13 (Div. 4)C1)

Patent No.: 4,849,505
Title: "Detectable Molecules, Method
Of Preparation And Use"
Inventor: Jannis G. Stravrianopoulos
Issue Date: July 18, 1989
(Doc. No.: Enz-13 (Div. 5))

Patent No.: 4,889,798
Title: "Heterologous System For The
Detection of Chemically Labeled
DNA and Other Biological Materials
Providing A Receptor Or Target
Moiety Thereon"
Inventor: Elazar Rabbani
Issue Date: December 26, 1989
(Doc. No.: Enz-14(C))

Patent No.: 4,894,325
Title: "Hybridization Method For The
Detection Of Genetic Material"
Inventors: Dean L. Engelhardt, et al.
Issue Date: January 16, 1990
(Doc. No.: Enz-15(P)C)

Patent No.: 4,987,065
Title: "In Vivo Labelling of Polynucleotide Sequences"
Inventors: Jannis G. Stravrianopoulos, et al.
Issue Date: January 22, 1991
(Doc. No.: Enz-16(C))

Patent No.: 4,755,458
Title: "Composition And Method For The
Detection Of The Presence Of A
Polynucleotide Sequence Of Interest"
Inventors: Elazar Rabbani, et al.
Issue Date: July 5, 1988
(Doc. No.: Enz-18)

Patent No.: 4,746,604
Title: "Specific Binding Assays Utilizing A
Viable Cell As A Label"
Inventor: Solomon Mowshowitz
Issue Date: May 24, 1988
(Doc. No.: Enz-21)

Patent No.: 4,900,659
Title: "Nucleotide Sequence Composition
And Method For Detection Of
Neisseria Gonorrhoeae And Method
For Screening For A Nucleotide
Sequence That Is Specific For A
Genetically Distinct Group"
Inventors: Andrew Lo, et al.
Issue Date: February 13, 1990
(Doc. No.: Enz-27)

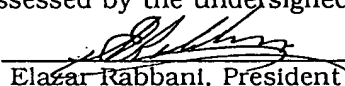
Patent No.: 4,868,103
Title: "Analyte Detection By Means Of
Energy Transfer"
Inventors: Jannis G. Stravrianopoulos, et al.
Issue Date: September 19, 1989
(Doc. No.: Enz-28)

and in and to said Letters Patent and all divisional, continuing,
substitute, renewal, reissue, and all other applications for Letters
Enzo Diagnostics, Inc.

Patent which have been or shall be filed in the United States and all foreign countries on any of said improvements; and in and to all original and reissued patents which have been or shall be issued in the United States and all foreign countries on said improvements:

Agrees that said Assignee may apply for and receive Letters Patent for said improvements in its own name; and that, when requested, without charge to but at the expense of said Assignee, its successors, assigns and legal representatives, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all said improvements; execute all rightful oaths, assignments, powers of attorney and other papers, communicate to said Assignee, its successors, assigns, and representatives, all facts known to the undersigned relating to said improvements and the history thereof; and generally do everything possible which said Assignee, its successors, assigns or representatives shall consider desirable for aiding in securing and maintaining proper patent protection for said improvements and for vesting title to said improvements and all applications for Letters Patent and all patents on said improvements, in said Assignee, its successors, assigns and legal representatives; and

Covenant with said Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

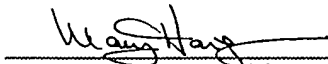

Elazar Rabbani, President
Enzo Blochem, Inc.

Acknowledgment

State of NEW YORK)
County of NEW YORK) ss:

On this 14 day of April, 1991 personally appeared before me ELAZAR RABBANI to me known, and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he executed the same, of his own free will and for the purposes set forth.

MARY HAIG
Notary Public, State of New York
No. 41-1628625
Qualified in Queens County
Certificate Filed in New York County
Commission Expires October 31, 1991


Notary Public

Enzo Diagnostics, Inc.

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